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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/781,273	02/13/2001	Yoshiki Ohta	Q62912	9431

7590 08/25/2004

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EXAMINER

MICHALSKI, JUSTIN I

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/781,273

Applicant(s)

OHTA, YOSHIKI

Examiner

Justin Michalski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 11 is objected to because of the following informalities: It is unclear what characters (1) and (2) on lines 8 and 9 respectively are referring to as they do not relate to reference 1 and 2 on Figure 1. Appropriate correction is required.
2. Claim 16 is objected to because of the following informalities: It is unclear what characters (1) and (2) on lines 10 and 12 respectively are referring to as they do not relate to reference 1 and 2 on Figure 1. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 11, 13, 16, and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claim 11, the term "ratio" on line 8 is not clearly defined as it can be interpreted as 1) a ratio of a) a sum of a spectrum average level of the second reproduced sound and a spectrum average level of the third reproduced sound to b) a spectrum average level of the first reproduced sound or 2) a ratio of a) a sum of a spectrum average level of the second reproduced sound and b) a spectrum average level of the third reproduced sound.

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Regarding claim 16, the term "ratio" on line 10 is not clearly defined as it can be interpreted as 1) a ratio of a) a sum of a spectrum average level of the second reproduced sound and a spectrum average level of the third reproduced sound to b) a spectrum average level of the first reproduced sound or 2) a ratio of a) a sum of a spectrum average level of the second reproduced sound and b) a spectrum average level of the third reproduced sound.

Claims 13 and 18 are dependent on claims 11 and 16 respectively and therefore are also indefinite.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plunkett (US Patent 5,386,478) in view of Koyama et al. (US Patent 5,581,621).

Regarding Claim 1, Plunkett discloses a sound field correcting method in an audio system, for supplying audio signals (Figure 1, outputs of source block 22) to a first sound generating means (speaker 14L) having a first reproducing frequency band and a second reproducing frequency band (Plunkett discloses controllers 24 which contain separately controllable frequency bands (i.e. first

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and second bands) (Column 3, lines 66-69) and a second sound generating means (Speaker 14R) having the second reproducing frequency band respectively to reproduce thereof, said correcting method comprising: a first step of supplying a noise (Plunkett discloses test signal (i.e. noise) to each loudspeaker) (Column 3, lines 28-31) to said first sound generating means and then detecting (microphone 36) a reproduced sound in the first reproducing frequency band and a reproduced sound in the second reproducing frequency band, that are reproduced by said first sound generating means; a second step of supplying the noise to said second sound generating means (Plunkett discloses test signal (i.e. noise) to each loudspeaker) (Column 3, lines 28-31) and then detecting the reproduced sound in the second reproducing frequency band (microphone 36); and a third step of adjusting levels of the audio signals supplied to said first and second sound generating means are adjusted to a predetermined target characteristic (Plunkett discloses making corrective adjustments (i.e. adjusting towards target characteristics) (Paragraph bridging columns 1 and 2). Although Plunkett discloses measuring the level of the reproduced sounds, Plunkett does not disclose using an average level of reproduced sound for adjusting the sound generating means. Koyama et al. discloses an automatic adjustment system of an audio device by detecting reproduced sounds (Figure 1). Koyama et al. further discloses a method of making an automatic adjustment to a parameter of an audio system based on an average level of a low band frequency response which is inherently a sound spectrum (Column 24, lines 54-59). Koyama et al. further discloses that if the

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average level is not within a predetermined range, adjustments are made to correct the output (Col. 24, lines 60-67). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to analyze and make an adjustment based on an average as disclosed by Koyama et al. in order to make an adjustment to enhance the output of an audio system.

Regarding Claim 2, Plunkett discloses a sound field correcting method in an audio system, for supplying audio signals (Figure 1, outputs of source block 22) to a first sound generating means (speaker 14L) having a first reproducing frequency band and a second reproducing frequency band (Plunkett discloses controllers 24 which contain separately controllable frequency bands (i.e. first and second bands) (Column 3, lines 66-69) and a second sound generating means (Speaker 14R) having the second reproducing frequency band respectively to reproduce thereof, said correcting method comprising: a first step of supplying a noise (Plunkett discloses test signal (i.e. noise) to each loudspeaker) (Column 3, lines 28-31) to said first sound generating means and then detecting (microphone 36) a reproduced sound in the first reproducing frequency band and a reproduced sound in the second reproducing frequency band, that are reproduced by said first sound generating means; a second step of supplying the noise to said second sound generating means (Plunkett discloses test signal (i.e. noise) to each loudspeaker) (Column 3, lines 28-31) and then detecting the reproduced sound in the second reproducing frequency band (microphone 36); a third step of adjusting levels of the audio signals

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supplied to said first and second sound generating means are adjusted to a predetermined target characteristic (Plunkett discloses making corrective adjustments (i.e. adjusting towards target characteristics) (Paragraph bridging paragraphs 1 and 2). Although Plunkett discloses measuring the level of the reproduced sounds, Plunkett does not disclose using an average level of reproduced sound for adjusting the sound generating means. Koyama et al. discloses an automatic adjustment system of an audio device by detecting reproduced sounds (Figure 1). Koyama et al. further discloses a method of making an automatic adjustment to a parameter of an audio system based on an average level of a low band frequency response which inherently a sound spectrum (Column 24, lines 54-59). Koyama et al. further discloses that if the average level is not within a predetermined range, adjustments are made to correct the output (Col. 214, lines 60-67). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to analyze and make an adjustment based on an average as disclosed by Koyama et al. in order to make an adjustment to enhance the output of an audio system.

Regarding Claim 3, Plunkett discloses a device as stated apropos of claim 1 and 2 above further disclosing speakers (14) reproducing a frequency band substantially equal to an audio frequency band, and Koyama et al. further discloses reproducing a low frequency band substantially equal to a low frequency band (Figure 2, converter 26) to a subwoofer.

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Regarding Claim 4, Plunkett discloses a device as stated apropos of claim 1 above further disclosing speakers (14) reproducing a frequency band substantially equal to an audio frequency band, and Koyama et al. further discloses reproducing a low frequency band substantially equal to a high frequency band (Figure 2, converter 29) to a high frequency speaker.

Regarding Claim 10, Plunkett discloses a sound field correcting method, comprising: detecting (microphone 36) a first reproduced sound and a second reproduced sound from a first speaker (speaker 14L), wherein the first reproduced sound is in a first frequency band and the second reproduced sound is in a second frequency band (Plunkett discloses controllers 24 which contain separately controllable frequency bands, i.e. first and second sounds (Col. 3, lines 66-69), and rest signals to each loudspeaker, Col 3, lines 28-31); detecting a third reproduced sound from a second speaker (speaker 14R), wherein the third reproduced sound is in the second frequency band (controller 24); and adjusting first audio signals supplied to said first speaker and second audio signals supplied to the second speaker so that a sum of the first, second, and third sounds are set equal to a ratio of predetermined target characteristics (Plunkett discloses making corrective adjustments(i.e. adjusting towards target characteristics) (Paragraph bridging columns 1 and 2). Plunkett does not disclose using an average level of reproduced sound for adjusting the sound generating means. Koyama et al. discloses an automatic adjustment system of an audio device by detecting reproduced sounds (Figure 1). Koyama et al.

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further discloses a method of making an automatic adjustment to a parameter of an audio system based on an average level of a low band frequency response which is inherently a sound spectrum (Column 24, lines 54-59). Koyama et al. further discloses that if the average level is not within a predetermined range, adjustments are made to correct the output (Col. 24, lines 60-67). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to analyze and make an adjustment based on an average as disclosed by Koyama et al. in order to make an adjustment to enhance the output of an audio system.

Regarding Claim 12, Plunkett discloses a device as stated apropos of claim 10 above further disclosing speakers (14) reproducing a frequency band substantially equal to an audio frequency band, and Koyama et al. further discloses reproducing a low frequency band substantially equal to a low frequency band (Figure 2, converter 26) to a subwoofer.

Regarding Claim 14, Plunkett discloses a device as stated apropos of claim 10 above further disclosing speakers (14) reproducing a frequency band substantially equal to an audio frequency band, and Koyama et al. further discloses reproducing a low frequency band substantially equal to a high frequency band (Figure 2, converter 29) to a high frequency speaker.

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Regarding Claim 15, Plunkett discloses a sound field corrector (Figure 1), comprising: a detection circuit (34) that detects a first reproduced sound, a second reproduced sound, and a third reproduced sound (test signals (Col. 3, lines 28-31), wherein the first reproduced sound is in a first frequency band, the second reproduced sound is in a second frequency band, and the third reproduced sound is in the second frequency band (Plunkett discloses separately controllable frequency bands (i.e. first and second bands) (Col. 3, lines 66-69), and wherein a first speaker (14L) outputs the first reproduced sound and the second speaker outputs the third reproduced sound; and a control circuit (remote 34 and 24) that adjusts first audio signals supplied to said first speaker and second audio signals supplied to the second speaker such that a sum of the second reproduced sound, third reproduced sound, and the first reproduced sound are set equal to a ratio of predetermined target characteristics (Plunkett discloses making corrective adjustments(i.e. adjusting towards target characteristics) (Paragraph bridging columns 1 and 2). Plunkett does not disclose using an average level of reproduced sound for adjusting the sound generating means. Koyama et al. discloses an automatic adjustment system of an audio device by detecting reproduced sounds (Figure 1). Koyama et al. further discloses a method of making an automatic adjustment to a parameter of an audio system based on an average level of a low band frequency response which is inherently a sound spectrum (Column 24, lines 54-59). Koyama et al. further discloses that if the average level is not within a predetermined range, adjustments are made to correct the output (Col. 24, lines 60-67). Therefore, it

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would have been obvious to one skilled in the art at the time the invention was made to analyze and make an adjustment based on an average as disclosed by Koyama et al. in order to make an adjustment to enhance the output of an audio system.

Regarding Claim 17, Plunkett discloses a device as stated apropos of claim 15 above further disclosing speakers (14) reproducing a frequency band substantially equal to an audio frequency band, and Koyama et al. further discloses reproducing a low frequency band substantially equal to a low frequency band (Figure 2, converter 26) to a subwoofer.

Regarding Claim 19, Plunkett discloses a device as stated apropos of claim 15 above further disclosing speakers (14) reproducing a frequency band substantially equal to an audio frequency band, and Koyama et al. further discloses reproducing a low frequency band substantially equal to a high frequency band (Figure 2, converter 29) to a high frequency speaker.

Claims 5-9 are analogous to claims 1-4 above and are rejected for the same reasons as stated apropos of claims 1-4.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

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See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM

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XU MEI
PRIMARY EXAMINER